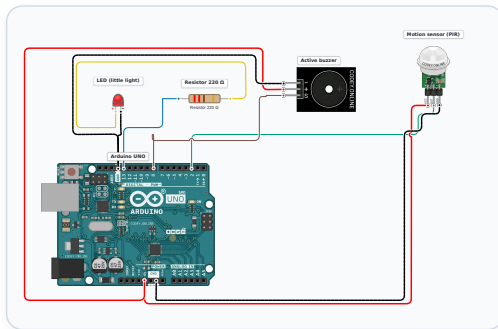


★ ★ Advanced beginner ⌚ 20 minutes

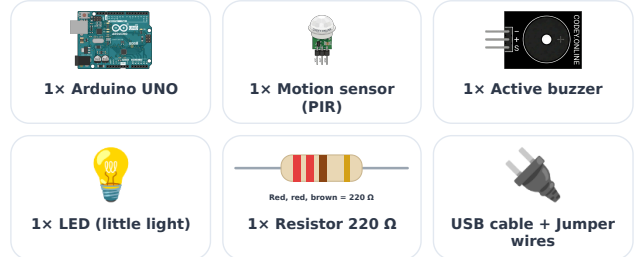
Motion alarm

You build a burglar alarm. Does the motion sensor see someone? Then the buzzer sounds and the red LED blinks.

Wiring diagram



What do you need?



This is how you build it

1. Connect the PIR sensor: OUT to pin 2, VCC to 5V and GND to GND.
2. Connect the buzzer: S to pin 8, + to 5V and – to GND.
3. Put the red LED with a 220 Ω resistor on pin 13, with the short leg to GND.

The code

```
// Motion alarm
// Is someone walking by? Then the red LED blinks and the buzzer sounds.

const int PIR_PIN = 2;    // OUT from the motion sensor on pin 2
const int BUZZER_PIN = 8; // S from the buzzer on pin 8
const int LED_PIN = 13;   // Red LED on pin 13 (through the resistor)

void setup() {
  Serial.begin(9600);
  pinMode(PIR_PIN, INPUT);
  pinMode(BUZZER_PIN, OUTPUT);
  pinMode(LED_PIN, OUTPUT);
  Serial.println(F("Sensor warming up... stand still!"));
  delay(10000); // The sensor needs a moment to get used to the room
  Serial.println(F("Alarm is on."));
}

void loop() {
  if (digitalRead(PIR_PIN) == HIGH) { // Motion seen!
    Serial.println(F("Motion! ALARM!"));
    for (int i = 0; i < 5; i++) { // Beep and blink 5 times
      digitalWrite(LED_PIN, HIGH);
      digitalWrite(BUZZER_PIN, HIGH);
      delay(150);
      digitalWrite(LED_PIN, LOW);
      digitalWrite(BUZZER_PIN, LOW);
      delay(150);
    }
  }
  delay(100);
}
```

What does the code do?

- The PIR sensor is on pin 2. If it sees motion, the pin is HIGH.
- When we start up, we wait 10 seconds. This lets the sensor get used to the room.
- When there is motion, we beep and blink 5 times.

Try this...

- Add a button to turn the alarm on and off
- Count how many times there was motion and show it in the serial monitor
- Make the alarm sound longer and louder the second time there is motion

🔧 Build this project with Codey: open codey.online/starter-kits/uno/projects/motion-alarm and click MAKE THIS. Then the code and the wiring diagram are ready right away.